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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/767,680	01/24/2001	Asger Geppel	54337.000010	4425

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Hunton & Williams LLP  
Intellectual Property Department  
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Washington, DC 20006

EXAMINER  
KAM, CHIH MIN

ART UNIT	PAPER NUMBER
1656	

MAIL DATE	DELIVERY MODE
01/17/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

09/767,680

**Applicant(s)**

GEPPEL ET AL.

**Examiner**

Chih-Min Kam

**Art Unit**

1656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-17, 34-39, 42-44, 48-52, 56 and 58-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-17, 35-39, 42-44 and 58-61 is/are rejected.
- 7) ☒ Claim(s) 34, 48-52, 56 and 62 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Status of the Claims*

1. Claims 13-17, 34-39, 42-44, 48-52, 56 and 58-62 are pending.

Applicants' response filed November 6, 2007 is acknowledged. Applicants' response has been fully considered. Therefore, claims 13-17, 34-39, 42-44, 48-52, 56 and 58-62 are examined.

### *Maintained - Claim Rejections - 35 USC § 103(a)*

2. Previous rejection of Claims 13-17, 35-39, 42-44 and 58-61 under 35 U.S.C. § 103(a) as being unpatentable over Kaneko *et al.* (USPN 5,075,226) is maintained (see paragraph 32 of the Office Action dated 8/1/2003). Applicant's arguments have been fully considered but are not deemed persuasive for the following reasons.

Applicant argues that the bacterial cultures as described by Kaneko *et al.* are used to produce diacetyl and acetoin, and there is no discussion or contemplation of isolating any starter culture from the fermentation process. The quotation "the culture solution or a concentration thereof is used to increase or improve the flavor of foods (Column 5, lines 6-10)" demonstrates that the culture solution produced via the culturing process (or a concentrate thereof) is used to increase or improve the flavor of food, which is an end use, leading ultimately to the consumption of the culture solution or concentrates as a food component. It is likely that the resulting diacetyl/acetoin would be isolated from impurities and other unwanted components in the culture medium before addition as a flavor enhancer to butter, cheeses, etc. Applicants submit that components such as animal tissue and living bacterial cells are likely unwanted components of a flavor enhancer for cheeses and butter, for example. Furthermore, Applicants

submit that a culture solution is different than a culture medium, as a culture solution may reference, for example, a filtrate of the culture medium. Moreover, the substance increasing or improving the flavor of foods in the culture solution or concentrate is the mixture of diacetyl and acetoin, and not the *Lactococcus lactis* bacterial cells themselves. Kaneko does not instruct one of ordinary skill in the art to include the *Lactococcus lactis* cells in the culture solution that is added as a flavoring agent. For example, Kaneko states that "[d]iacetyl and acetoin in the culture can be concentrated by distillation, etc. (See Kaneko, last line of column 4 extending to the first line of column 5). Applicants submit that it is unclear whether bacterial cells would even survive a distillation process, let alone be useful as a starter culture. Therefore, Kaneko et al. fails to provide a suggestion or motivation to isolate or harvest bacteria at the completion of his claimed process for the purpose of making a frozen or freeze-dried starter culture. (pages 2-4 of the response).

Applicants' response has been fully considered, however the arguments are not found persuasive because of the following reasons. Kaneko *et al.* teach culturing lactic acid bacteria in a medium having haemin (e.g., at a concentration of 0.1-500  $\mu\text{M}$ ) to produce diacetyl and acetoin, and the culture solution or a concentrate thereof is used to increase or improve the flavor of foods (column 5, lines 6-10). While Kaneko *et al.* discloses the diacetyl and acetoin in the culture solution may be concentrated by distillation (column 4, last line to column 5, first line), Kaneko *et al.* does not indicate the *Lactococcus lactis* cells would be excluded from the culture solution produced via the culturing process, thus the resulting culture solution would contain the same modified lactic acid bacteria (i.e., lactic acid bacteria having at least 0.1 ppm on a dry matter basis of a porphyrin compound) as the claimed starter culture. Although the reference

does not indicate the resulting culture solution can be isolated as starter culture, the contents of the resulting culture solution containing the modified lactic acid bacteria would not change no matter it is in isolated form, or in a frozen or freeze-dried form. MPEP 2113 states that [E]ven though product-by process claim are limited by and defined by the process (e.g., isolation step), determination of patentability is based on the product itself. Furthermore, the culture solutions of bacterial cells are generally stored in frozen or freeze-dried form, it is obvious that the culture solution containing the modified lactic acid bacteria can be stored in frozen or freeze-dried form for subsequent use. Therefore, the rejection of the claims under 35 U.S.C. §103(a) is maintained.

***Claim Objections***

3. Claims 34, 48-52, 56 and 62 are objected to because the claims are dependent from a rejected claim.

***Conclusion***

4. Claims 13-17, 35-39, 42-44 and 58-61 are rejected; and claims 34, 48-52, 56 and 62 are objected to.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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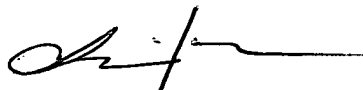
however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Min Kam whose telephone number is (571) 272-0948. The examiner can normally be reached on 8.00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen Bragdon can be reached at 571-272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chih-Min Kam, Ph. D.  
Primary Patent Examiner



CHIH-MIN KAM  
PRIMARY EXAMINER

CMK  
January 14, 2008